IN THE CLAIMS

1. (Currently Amended) A method of making a semiconductor device including inductors comprising;

forming a semicircular columnar groove in an insulating layer on a semiconductor substrate;

depositing a conductive material layer over the insulating layer having the groove;

patterning the conductive material layer to form underlying conductive lines slantly longitudinally with a predetermined distance therebetween on said groove;

forming a cylindrical insulating layer in said groove formed with said underlying conductive lines and on the surface of said substrate, wherein an upper portion of said cylindrical ~~insulator~~ insulating layer protrudes from an upper surface of said groove; and

forming upper conductive lines on said ~~insulator~~ cylindrical insulating layer slantly longitudinally at an angle opposite the longitudinal slant of the underlying conductive lines with a predetermined distance between upper conductive lines to contact with said underlying conductive lines, wherein said upper conductive lines extend up and around said upper portion of said cylindrical ~~insulator~~ insulating layer to form a rounded upper conductive line, the upper conductive lines having a substantially uniform thickness conformally formed on said insulator.

2. (Previously presented) A method of making a semiconductor device including inductors as claimed in Claim 1, wherein said forming said groove further comprises:

forming a nitride film on said insulating layer;

forming a photosensitive film pattern for exposing said nitride film for a groove;

etching said nitride film by using said photosensitive film pattern as a mask to be exposed said insulating layer for forming said groove; and

etching said exposed insulating layer.

3. (Previously presented) A method of making a semiconductor device including inductors as claimed in Claim 2, wherein said etching is performed by any one of an isotropic etching method and a mixed method of anisotropic etching and isotropic etching.

4. (Original) A method of making a semiconductor device including inductors as claimed in Claim 1, wherein said underlying conductive lines are slantly longitudinally formed along said groove to across.

5. (Previously presented) A method of making a semiconductor device including inductors as claimed in Claim 1, further comprising:

forming an insulating layer on the surface of said underlying conductive lines;

covering the surface of said substrate formed with said insulating layer with an oxidization prevention layer; and

burying material between said upper conductive lines in said groove.

6. (Original) A method of making a semiconductor device including inductors as claimed in Claim 5, wherein said buried material is a flux material, such as spin on glass.

7. (Previously presented) A method of making a semiconductor device including inductors as claimed in Claim 6, wherein said buried material is buried until said oxidization prevention layer is exposed when said flux material is etched back.

8. (Previously presented) A method of making a semiconductor device including inductors as claimed in Claim 5, which further comprises forming a contact region by etching said insulating layer and said oxidization prevention layer for connecting said underlying and upper conductive lines after the burying.

9. (Original) A method of making a semiconductor device including inductors as claimed in Claim 5, wherein said insulating layer is formed by oxidization of said underlying conductive lines.

10. (Original) A method of making a semiconductor device including inductors as claimed in Claim 5, wherein an oxide film is formed on said underlying conductive lines.

11. (Previously presented) A method of making a semiconductor device including inductors as claimed in Claim 1, wherein said forming said insulating layer comprises;

laminating an oxidizable material on the surface of said substrate to thereby be-entirely buried said groove; and

forming said insulating layer on the surface of said substrate and said groove by oxidization of said oxidizable material.

12. (Previously presented) A method of making a semiconductor device including inductors as claimed 11, wherein said filling said groove with the oxidizable material further comprises:

laminating oxidizable materials on the surface of said substrate to thereby bury said groove; and

etching said oxidizable materials to fill only in said groove.

13. (Original) A method of making a semiconductor device including inductors as claimed 12, wherein said oxidizable materials is any one of polysilicon or amorphous silicon.

14. (Original) A method of making a semiconductor device including inductors as claimed in Claim 11, wherein said oxidizable material is etched by CMP process.

15. (Previously presented) A method of making a semiconductor device including inductors as claimed in Claim 11, wherein said step of etching said oxidizable materials is performed by an etch-back method.

16. (Cancelled)

17. (Withdrawn) A method of making a semiconductor device including inductors, comprising the steps of:

forming a semicircle groove in an insulating layer on a semiconductor substrate;

forming underlying conductive lines with a predetermined distance therebetween to across groove;

forming a magnetic core in said groove formed with said underlying conductive lines; and

forming upper conductive lines on said magnetic core, said upper conductive lines being contacted with said underlying conductive lines.

18. (Withdrawn) A method of making a semiconductor device including inductors as claimed in Claim 17, wherein said step of forming groove comprises the steps of;

forming an oxide film as a relief region on said substrate;

forming a silicon nitride layer and an oxide film in high temperature on said oxide film;

forming a trench by etching said oxide film, silicon nitride layer and oxide film in high temperature;

forming an oxide film on the entire surface of said substrate;

forming an semicircle groove by wet-etching said oxide film; and

removing said oxide film, silicon nitride layer and oxide film in high temperature.

19. (Withdrawn) A method of making a semiconductor device including inductors as claimed in Claim 17, wherein said step of forming underlying conductive lines comprises the steps of;

forming an oxide film on the entire surface of said substrate;

forming a conductive material on said oxide film; and

forming underlying conductive lines with a predetermined distance therebetween along said groove by patternizing said conductive material.

20. (Withdrawn) A method of making a semiconductor device including inductors as claimed in Claim 19, wherein said underlying conductive lines are formed with a predetermined distance therebetween to across said groove.

21. (Withdrawn) A method of making a semiconductor device including inductors as claimed in Claim 19, wherein said underlying conductive lines is made of aluminum or copper having low resistance value.

22. (Withdrawn) A method of making a semiconductor device including inductors as claimed in Claim 17, wherein said step of forming said magnetic core comprises the steps of;

forming an oxide film, a magnetic material and a capping oxide layer in order on said substrate formed with said underlying conductive lines;

forming said magnetic core in said groove by patternizing said magnetic material; and

wrapping said magnetic core with said oxide film by forming a spacer at both side of said magnetic core.

23. (Withdrawn) A method of making a semiconductor device including inductors as claimed in Claim 17, wherein said upper conductive lines are slantly longitudinally formed with a predetermined distance therebetween along said groove to across.

24. (Withdrawn) A method of making a semiconductor device including inductors as claimed in Claim 23, wherein said underlying conductive lines are made of aluminum or copper having low resistance value.

25. (Currently Amended) A method of making a semiconductor device including an inductor comprising:

forming a groove in an insulating layer on a semiconductor substrate;

forming lower conductive lines across said groove;

depositing a conductive material layer over the insulating layer having said groove;

patterning the conductive material layer to form lower conductive lines slantly longitudinally across said groove;

forming a cylindrical insulator above said lower conductive lines and aligned with the groove, wherein an upper portion of said cylindrical insulator protrudes from an upper surface of said groove;

forming upper conductive lines over said insulator to form a rounded upper conductive line; and

electrically coupling said upper conductive lines to said lower conductive lines.

26. (Previously presented) A method of making a semiconductor device as claimed in Claim 25, wherein said forming said groove further comprises:

forming a nitride film on said insulating layer;

forming a photosensitive film pattern on said nitride film;

etching said nitride film by using said photosensitive film pattern as a mask to expose the insulating layer; and

etching said exposed insulating layer.

27. (Previously presented) A method of making a semiconductor device as claimed in Claim 26, wherein said etching is performed by an isotropic etching method or a mixed method of anisotropic etching and isotropic etching.

28. (Cancelled)

29. (Previously presented) A method of making a semiconductor device as claimed in Claim 25, further comprising:

forming a second insulating layer on the surface of said lower conductive lines;

covering the surface of said substrate including said second insulating layer with an oxidization prevention layer; and

burying a buried material between said upper conductive lines in said groove.

30. (Previously presented) A method of making a semiconductor device as claimed in Claim 29, wherein said buried material is a flux material such as spin on glass.

31. (Previously presented) A method of making a semiconductor device as claimed in Claim 30, wherein said buried material is buried until said oxidization prevention layer is exposed when said flux material is etched back.

32. (Previously presented) A method of making a semiconductor device as claimed in Claim 29, further comprising forming a contact region by etching said second insulating layer and said oxidization prevention layer for connecting said upper and lower conductive lines.

33. (Previously presented) A method of making a semiconductor device as claimed in Claim 29, wherein said second insulating layer is formed by oxidizing said lower conductive lines.

34. (Previously presented) A method of making a semiconductor device as claimed in Claim 29, wherein an oxide film is formed on said lower conductive lines.

35. (Previously presented) A method of making a semiconductor device as claimed in Claim 25, wherein said forming said cylindrical insulator comprises;

filling said groove with an oxidizable material; and

oxidizing said oxidizable material.

36. (Previously presented) A method of making a semiconductor device as claimed in Claim 35, wherein said filling said groove with an oxidizable material comprises:

laminating an oxidizable material on the entire surface of said substrate; and

etching said oxidizable material.

37. (Previously presented) A method of making a semiconductor device as claimed in Claim 36, wherein said oxidizable material is polysilicon or amorphous silicon.

38. (Previously presented) A method of making a semiconductor device as claimed in Claim 36, wherein said oxidizable material is etched by a CMP process.

39. (Previously presented) A method of making a semiconductor device as claimed in Claim 36, wherein said etching of said oxidizable material is performed by an etch-back method.

40. (Previously presented) A method of making a semiconductor device as claimed in Claim 25, wherein said upper and lower conductive lines are slanted longitudinally along the grove in opposite directions.

41. (Withdrawn) A method of making a semiconductor device including an inductor, comprising the steps of:

forming a groove in an insulating layer on a semiconductor substrate;

forming lower conductive lines across the groove;

forming a magnetic core above said lower conductive lines and aligned with said groove; and

forming upper conductive lines over said magnetic core;

electrically coupling said upper conductive lines to said lower conductive lines.

42. (Withdrawn) A method of making a semiconductor device as claimed in Claim 41, wherein said step of forming the groove comprises the steps of:

forming an oxide film as a relief region on said substrate;

forming a silicon nitride layer and a high temperature oxide film on said oxide film;

forming a trench by etching said oxide film, silicon nitride layer and high temperature oxide film;

forming an second oxide film on the entire surface of said substrate;

forming an groove having a semicircular cross-section by wet-etching said second oxide film; and

removing said oxide film, silicon nitride layer and high temperature oxide film.

43. (Withdrawn) A method of making a semiconductor device as claimed in Claim 41, wherein said step of forming lower conductive lines comprises the steps of:

forming an oxide film on the entire surface of said substrate;

forming a conductive material on said oxide film; and

by patternizing said conductive material.

44. (Withdrawn) A method of making a semiconductor device as claimed in Claim 41, wherein said lower conductive lines are formed across said groove with a predetermined distance therebetween.

45. (Withdrawn) A method of making a semiconductor device as claimed in Claim 43, wherein said lower conductive lines are made of aluminum or copper.

46. (Withdrawn) A method of making a semiconductor device as claimed in Claim 41, wherein said step of forming said magnetic core comprises the steps of:

forming an oxide film over said lower conductive lines;

forming a magnetic material over said oxide film;

forming a capping oxide layer over said magnetic material;

patternizing said magnetic material; and

forming a spacer at each side of said magnetic core, thereby wrapping said magnetic core with oxide.

47. (Withdrawn) A method of making a semiconductor device as claimed in Claim 41, wherein said upper conductive lines are formed across the core and slanted longitudinally along the core with a predetermined distance therebetween.

48. (Withdrawn) A method of making a semiconductor device as claimed in Claim 47, wherein said lower conductive lines are made of aluminum or copper.

49. (Currently Amended) A method of making a semiconductor device including an inductor, comprising:

forming a semicircular groove in an insulating layer on a semiconductor substrate; and

forming an inductor having a cylindrical cross-section in the groove, wherein an upper portion of the cylindrical cross-section protrudes from an upper surface of the groove

and wherein a conducting portion of the inductor is formed to have a substantially helically shaped path.

50. (Currently Amended) A method of making a semiconductor device comprising:

forming an insulating layer on a semiconductor substrate;

forming a groove in the insulating layer;

forming lower conductive lines slantly longitudinally on the groove, the lower conductive lines spaced apart from each other;

filling the groove with an oxidizable material layer overlying the lower conductive lines,

growing the oxidizable material layer by oxidation to form a cylindrical insulating layer in the groove such that an upper portion of the cylindrical insulator protrudes from an upper surface of the groove;

forming upper conductive lines on the insulator to be in contact with the underlying lower conductive lines.

51. (Previously presented) The method of claim 50, wherein the upper conductive lines extend up and around said upper portion of said cylindrical insulator to form a rounded upper conductive line.

52. (New) A method of making a semiconductor device including inductors comprising;

forming a semicircular columnar groove in an insulating layer on a semiconductor substrate;

depositing a conductive material layer over the insulating layer having the groove;

patterning the conductive material layer to form underlying conductive lines slantly longitudinally with a predetermined distance therebetween on said groove;

forming a magnetic core in the groove formed with the underlying conductive lines;

forming a cylindrical insulating layer in said groove formed with said underlying conductive lines and on the surface of said substrate, wherein an upper portion of said cylindrical insulating layer protrudes from an upper surface of said groove; and

forming upper conductive lines on said cylindrical insulating layer slantly longitudinally at an angle opposite the longitudinal slant of the underlying conductive lines with a predetermined distance between upper conductive lines to contact with said underlying conductive lines, wherein said upper conductive lines extend up and around said upper portion of said cylindrical insulating layer to form a rounded upper conductive line, the upper conductive lines having a substantially uniform thickness conformally formed on said insulator.